

# इंटरनेट

# मानक

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IS 6981 (1992): Glass jars for air-depolarized primary  
(caustic soda) wet cells [CHD 10: Glassware]



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वायु विध्रवित प्राथमिक ( कास्टिक सोडा ) आर्द्र  
सेलों के लिए कांच के मर्तबान – विशिष्ट

( पहला पुनरीक्षण )

*Indian Standard*

GLASS JARS FOR AIR-DEPOLARIZED  
PRIMARY ( CAUSTIC SODA ) WET CELLS –  
SPECIFICATION

( *First Revision* )

UDC 666.172.5 : 621.352.5.035.13

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BUREAU OF INDIAN STANDARDS  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002

## FOREWORD

This Indian Standard ( First Revision ) was adopted by the Bureau of Indian Standards, after the draft finalized by the Glassware Sectional Committee had been approved by the Chemical Division Council.

This Indian Standard was first published in 1973, with a view to cover the requirements and methods of sampling and test for glass jars for air-depolarized primary cells, which were earlier covered under IS 4268 : 1967 revised in 1978. Also, Indian Standards on methods of thermal shock test, alkalinity test and polariscopic examination have been formulated after the publication of this standard.

In this revision the thermal shock test has been made more stringent. Also, the requirements for resistance to alkalinity and polariscopic examination have been added.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values ( *revised* )'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

## Indian Standard

# GLASS JARS FOR AIR-DEPOLARIZED PRIMARY ( CAUSTIC SODA ) WET CELLS — SPECIFICATION

( *First Revision* )

### 1 SCOPE

This standard prescribes requirements and methods of sampling and test for glass jars for air-depolarized primary ( caustic soda ) wet cells.

### 2 REFERENCES

The following Indian Standards are necessary adjuncts to this standard:

IS No.	Title
252 : 1991	Caustic soda, pure and technical ( <i>third revision</i> )
1381 : 1982	Glossary of terms relating to glass and glassware ( <i>first revision</i> )
4905 : 1968	Methods for random sampling
6506 : 1972	Methods for thermal shock tests on glassware
9153 : 1978	Methods of polariscopic examination of glassware

### 3 TERMINOLOGY

For the purpose of this standard, the definitions given in IS 1381 : 1982 shall apply.

### 4 REQUIREMENTS

#### 4.1 Material

The glass shall be resistant to alkali. When tested in accordance with 6.1, the jars shall pass the test.

#### 4.2 Colour

The jars shall be transparent and colourless.

#### 4.3 Workmanship and Finish

##### 4.3.1 Polariscopic Examination

The glass jars shall be well annealed and nowhere shall exceed above one standard strain disc when tested in accordance with IS 9153 : 1978.

4.3.2 The jars shall have a smooth surface free from cracks or pin-holes. They shall be free from cords, bubbles, striae, mould marks and other usual defects.

4.3.3 The jars shall be regular in shape and

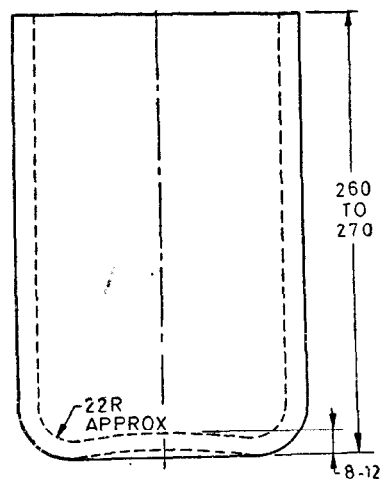
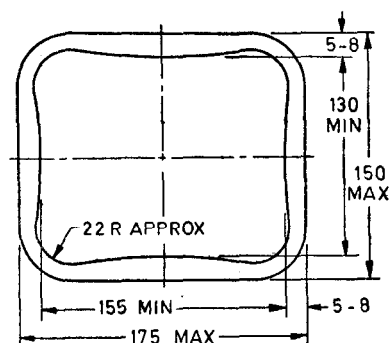
symmetrical about the axis which shall be perpendicular to the plane of the base.

4.3.4 The mouth of the jars shall be plain and even to permit perfect sealing.

4.3.5 The base shall enable the jars to stand vertically without spinning or rocking.

#### 4.4 Pattern and Dimensions

The pattern and dimensions of the jar shall be as shown in Fig. 1.



All dimensions in millimetres.

**FIG. 1 GLASS JAR FOR AIR-DEPOLARIZED  
PRIMARY ( CAUSTIC SODA ) WET CELLS**

**4.4.1** The corners of the rectangular sections shall be rounded off to an approximate radius of 22 mm.

#### 4.5 Resistance to Thermal Shock

When tested according to method A prescribed in IS 6506 : 1972, the jars shall withstand, without any damage, a temperature differential of 90°C.

### 5 PACKING AND MARKING

#### 5.1 Packing

Glass jars shall be suitably packed so as to avoid any damage/loss during transit.

#### 5.2 Marking

The jars shall be distinctly and legibly marked

with the following informations:

- a) Month and year of manufacture, and
- b) Indication of the source of manufacture.

### 6 TEST

#### 6.1 Test for Alkali Resistance

1.25 kg of solid NaOH, technical grade (see IS 252 : 1991) shall be poured quickly at a time in 4 litres of water in a jar. The jars with the solution shall be kept for 100 hours. There shall be no sign of crack or damage at any stage to the jar under test.

### 7 SAMPLING

Representative samples of glass jars shall be drawn and adjudged for conformity in accordance with the method prescribed in Annex A.

## ANNEX A

( Clause 7 )

### SAMPLING OF AIR-DEPOLARIZED PRIMARY ( CAUSTIC SODA ) WET CELLS

#### A-1 SCALE OF SAMPLING

##### A-1.1 Lot

In any consignment all the glass jars, belonging as far as possible, to the same batch of manufacture shall be grouped together to constitute a lot.

**A-1.2** Samples shall be tested from each lot for ascertaining the conformity of the glass jars in the lot to the requirements of this specification.

**A-1.3** The number of glass jars to be selected as samples for different tests depends on the size of the lot and shall be as given in Table 1. These jars shall be selected at random from the lot.

**A-1.3.1** In order to ensure the randomness of selection random sampling procedures given in IS 4905 : 1968 may be followed.

#### A-2 NUMBER OF TESTS AND CRITERIA FOR CONFORMITY

##### A-2.1 Visual and Dimensional Requirements

The number of glass jars to be selected for examining workmanship and then pattern and dimensions is given in col 2 of Table 1. A glass jar which fails in respect of one or more of the above characteristics shall be called a defective.

The lot shall be accepted at this stage if the number of defectives is less than or equal to the acceptance number given in col 3 of Table 1.

##### A-2.2 Thermal Shock Test and Alkali Resistance Test Requirement

The number of glass jars to be tested for thermal shock and alkali resistance is given in col 4 of Table 1. There shall be no failure if the lot is to be accepted.

**Table 1 Sample Size and Criteria for Conformity**

( Clauses A-1.3, A-2.1 and A-2.2 )

Lot Size	For Workmanship and Finish Pattern and Dimensions		Thermal Shock and Alkali Resistance Test, Sample Size
	Sample Size	Acceptance Number	
(1)	(2)	(3)	(4)
Up to 1 000	13	1	1
1 001 to 3 000	20	2	2
3 001 to 5 000	32	3	2
5 001 to 10 000	50	5	3
10 001 to 35 000	90	7	3
35 001 and above	125	10	4

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## BUREAU OF INDIAN STANDARDS

### Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002  
Telephones : 331 01 31, 331 13 75

Telegrams : Manaksanstha  
( Common to all Offices )

### Regional Offices :

Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg  
NEW DELHI 110002

### Telephone

{ 331 01 31  
{ 331 13 75

Eastern : 1/14 C. I. T. Scheme VII M, V. I. P. Road, Maniktola  
CALCUTTA 700054

{ 37 84 99, 37 85 61,  
{ 37 86 26, 37 86 62

Northern : SCO 445-446, Sector 35-C, CHANDIGARH 160036

{ 53 38 43, 53 16 40,  
{ 53 23 84

Southern : C. I. T. Campus, IV Cross Road, MADRAS 600113

{ 235 02 16, 235 04 42,  
{ 235 15 19, 235 23 15

Western : Manakalaya, E9 MIDC, Marol, Andheri ( East )  
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